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Isaac Bentolila

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EXAMINER

NGUYEN BA, HOANG VU A

ART UNIT

PAPER NUMBER

2421

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/043,714	Applicant(s) BENTOLILA ET AL.	
	Examiner Hoang-Vu A. Nguyen-Ba	Art Unit 2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This action is responsive to amendment filed on February 9, 2009.
2. Claims 1-21 remain pending. Claims 1, 8 and 12 are independent claims.

Response to Amendments

3. Per Applicant's request, Claims 1-2, 8 and 12 have been amended.

Response to Arguments

4. Applicants' arguments have been fully considered but they are not moot in view of the new grounds of rejection.

Claim Rejections – 35 USC § 103

5. The following is a quotation of the 35 U.S.C. § 103(a) which form the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/33160 by Charles Eldering ("Eldering").

It should be noted that hereinafter the use of the clause "see at least" should be interpreted that the cited portions that follow the clause are not the only portions that are considered to be relevant. Should Applicant find that the cited portions are not relevant, other portions of the disclosure of the prior art reference will be provided as additional evidence and/or context to the relevancy of the previously cited portions. Since the evidence is from the same reference, the introduction of the additional evidence in response to Applicant's arguments should not therefore be considered to be that of new grounds of rejection.

Claim 1

Eldering discloses at least

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a server-side system (see at least FIG. 1, element 100) for evaluating television behavioral viewing data from a plurality of users and for categorizing the data into category groups (see at least FIG. 1, Subscriber Characterizing System);

a clustering engine included in the server-side system for receiving the television behavioral viewing data, processing the television behavioral viewing data, and generating user profiles targeting the category groups (see at least FIG. 1, Subscriber Characterizing System);

a server-side system adapted to classify a user into at least one of the category groups based on advertising category prototypes (e.g., p. 15, lines 24-27; p. 10, lines 7-14) received from the clustering engine (see at least p. 15, line 16 – p. 16, line 31; p. 19, lines 17-22; p. 20, lines 13-25; the claimed category groups are interpreted to be similar to Eldering's demographic groups in FIG. 10B);

a contextual behavioral profiling agent for deriving profiling information related to a television user's viewing behavior with content and usage-related preferences (p. 10, line 31 – p. 11, line 10; p. 11, lines 18 – p. 12, line 9, e.g., "subscriber profile vector" at p. 15, line 28); and

a behavioral model database for storing in the system the profiling information derived by the profiling agent (p. 12, lines 10-14).

While the classifying of user into category group (e.g., Eldering's program/advertisement characteristics vector), the contextual behavioral profiling agent (e.g., Eldering's subscriber profile), the behavioral model database (e.g., storage medium) are described for a client-server system where most of the above components are located on the server side, Eldering also provides for a set up where the system can be run locally in a television set-top (see at least Abstract and p. 36, line 5 -- p. 38, line 38).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Eldering system so that the subscriber characterization system (e.g., the claimed evaluating of behavioral viewing data, the group categorizing and the clustering engine) is located on the server side and the program/advertisement characteristic vector, subscriber profile, the resulting characterization information (e.g., the claimed classifying

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agent, the contextual behavioral profiling agent, the behavioral model database) are located on the client-side. One skilled in the art would have been motivated to implement such a modification in order to allow subscriber characterization information to be stored locally at a subscriber location and directly controlled by the subscriber (Eldering; p. 12, lines 10-17).

7. Claims 2-4 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/33160 by Charles Eldering (“Eldering”) in view of U.S. Patent No. 6,738,978 to Hendricks (“Hendricks978”) in view of U.S. Patent No. 6,088,722 to Herz et al. (“Herz’722”).

Claims 2-3 and 5-7

The rejection of base claim is incorporated. For features recited in Claims 2-3 and 5-7, see rejections and examiner’s response to Applicant’s arguments in previous Office actions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Eldering with Hendricks978-Herz722 because the combination would improve customer targeting advertisement.

Claim 4

Eldering further discloses *wherein said clustering engine is programmed to generalize user profiles in a targeted category group into an aggregation representative of all dimensions most strongly in common for the targeted group and all dimensions most unique across several of the targeted groups* (see at least FIG. 10B).

8. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,798,785 to Hendricks (“Hendricks785”) in view of U.S. Patent No. 6,177,931 to Alexander and further in view of WO 00/33160 by Charles Eldering (“Eldering”).

Claim 8

Hendricks785 discloses at least *in an interactive display system* (see at least FIG. 1) *having a head-end side for distributing program content* (see at least FIG. 1, element 208) *that*

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has been pruned for a category, and a client side (see at least FIG. 1, element 202) receiving the program content and selectively displaying the program content in accordance with the selection of a user (see at least 4:45-48), a preference engine for determining a preferred program content for the user (see at least 29:26-28 teaching microprocessor element 602), comprising:

a user monitoring device (see at least 29:26-28 teaching microprocessor element 602) receiving the pruned program content at the client side for recording contextual transition behaviors profiling the user to continually build a user profile of preferences and contextual transition behaviors associated with the user (see at least 29:33-43 teaching recording contextual behaviors and storing them in memory and learning a subscriber's favorite channels).

Hendricks785 does not specifically disclose:

a program distributing service at the head-end side for providing to the user the program content in accordance with the user profile.

However, in an analogous art, Alexander teaches a device (5:20-55; a device which would make up a cable box) for providing to the one or more users the program content in accordance with the user's demographic information and with the contextual transition behavior profile (see at least 30:59-67 teaching automatically tuning to a channel because of the user profile and 28:10-53 teaching the EPG recording demographic and contextual transition behavior profile information).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the user monitoring system of Hendricks785 with the user preference system of Alexander for the purpose of customizing the EPG to provide custom advertising to the viewer based on the user profile (Alexander; 2:17-20).

The combination Hendricks785-Alexander does not specifically disclose the remaining feature of the claim.

However, in an analogous art, Eldering discloses:

wherein a user is classified at the client-side into at least one category group based on category prototypes received from the head-end side (e.g., p. 15, lines 24-27; p. 10, lines 7-14) received from the clustering engine (see at least p. 15, line 16 – p. 16, line

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31; p. 19, lines 17-22; p. 20, lines 13-25; the claimed category groups are interpreted to be similar to Eldering's demographic groups in FIG. 10B).

While the classifying of user into category group (e.g., Eldering's program /advertisement characteristics vector) is described for a client-server system where most of the above components are located on the server side, Eldering also provides for a set up where the system can be run locally in a television set-top (see at least Abstract and p. 36, line 5 -- p. 38, line 38).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Eldering system so that the subscriber characterization system is located on the server side and the program/advertisement characteristic vector, subscriber profile, the resulting characterization information are located on the client-side. One skilled in the art would have been motivated to implement such a modification in order to allow subscriber characterization information to be stored locally at a subscriber location and directly controlled by the subscriber (Eldering; p. 12, lines 10-17).

Furthermore and in response to Applicant's arguments that the claimed *contextual transition behavior profiling* is absent in Hendricks795-Alexander, the Office respectfully disagrees with this assertion and while it is maintained that the claimed feature is obvious over the combination, the Office further cites the following portion of Eldering as being relevant to the claimed feature (p. 10, line 31 – p. 11, line 10; p. 11, lines 18 – p. 12, line 9, e.g., "subscriber profile vector" at p. 15, line 28).

Claims 9-10

The rejection of the base claim is incorporated. For features recited in Claims 9-10, see rejections and examiner's response to Applicant's arguments in previous Office actions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Eldering with Hendricks795-Alexander because the combination would improve customer targeting advertisement.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,798,785 to Hendricks ("Hendricks785") in view of U.S. Patent No. 6,177,931 to Alexander and

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further in view of WO 00/33160 by Charles Eldering (“Eldering”) and further in view of U.S. Patent No. 5,801,747 to Bedard.

Claim 11

See rejection in Claim 8 above and in previous Office actions.

10. Claims 12, 13, 15-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,738,978 to Hendricks (“Hendricks978”) in view of WO 00/33160 by Charles Eldering (“Eldering”).

Claim 12

Hendricks978 discloses at least *in a program content delivery system* (see at least FIG. 5) *having a head-end side* (see at least FIG. 1, element 208) *and a client side* (see at least FIG. 1, element 220), *a system for targeting program delivery* (see at least 35:64-65), *comprising:*

a central data system at the head-end side which receives viewing information (see at least 36:17-23 and FIG. 1, element 214 *teaching a network controller receiving and storing information which is located at the head end)* *selected from the group consisting of watch data* (see at least 36:29-35), *watch start time data, watch duration data, and watch channel data, demographic information describing a program user* (see at least 36:17-23), *and electronic program guide information with metadata describing a program content;*

a demographic cluster knowledge base acquirer receiving from the client side behavioral data of the user (see at least 36:14-23 *teaching receiving demographic data to generate a matrix, the collected data from groups of subscribers being considered as clusters*) , *the knowledge base acquirer outputting a knowledge base in the form of a transition matrix with weight sets* (see at least 78:13-17 *teaching outputting a matrix and 71:3-10 teaching transmitting weighted information to the set top terminals and 37:1-5), the transition matrix predicting a demographic group of the user* (see at least 37:1-5 *teaching selecting a group for a user and 36:18-24 teaching the matrices being developed*

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using demographic information so that the selecting of a user by the matrix is using demographic data to select a group for the user); *and*

a program content generating module (see at least FIG. 17, element 428 generating program content) disposed at the head-end side and providing to the client side streams of program content based on the predicted demographic group of the user (see at least 37:1-5 teaching selecting a group for a user and 36:18-24 teaching the matrices being developing using demographic data to select a group for the user and 38:56-59 teaching three methods for streaming/delivering advertisements to the user). Hendricks978 does not specifically disclose the remaining feature of the claim.

However, in an analogous art, Eldering discloses:

wherein a user is classified into at least one demographic group based on advertising category prototypes transmitted from the head-end side (e.g., p. 15, lines 24-27; p. 10, lines 7-14) received from the clustering engine (see at least p. 15, line 16 – p. 16, line 31; p. 19, lines 17-22; p. 20, lines 13-25; the claimed category groups are interpreted to be similar to Eldering's demographic groups in FIG. 10B).

While the classifying of user into category group (e.g., Eldering's program /advertisement characteristics vector) is described for a client-server system where most of the above components are located on the server side, Eldering also provides for a set up where the system can be run locally in a television set-top (see at least Abstract and p. 36, line 5 -- p. 38, line 38).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Eldering system so that the subscriber characterization system is located on the server side and the program/advertisement characteristic vector, subscriber profile, the resulting characterization information are located on the client-side. One skilled in the art would have been motivated to implement such a modification in order to allow subscriber characterization information to be stored locally at a subscriber location and directly controlled by the subscriber (Eldering; p. 12, lines 10-17).

Furthermore and in response to Applicant's arguments that the claimed *transition matrix* is absent in Hendricks978, the Office respectfully disagrees with this assertion and while it is maintained that the claimed feature is obvious over the combination, the Office further cites the

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following portion of Eldering as being relevant to the claimed feature (see at least FIG. 10B; p. 10, line 31 – p. 11, line 10; p. 11, lines 18 – p. 12, line 9, e.g., "subscriber profile vector" at p. 15, line 28).

Claims 13, 15, 16, 17, 18 and 21

The rejection of base claim 12 is incorporated. For features recited in Claims 13, 15, 16, 17, 18 and 21, see above rejections and previous Office actions.

11. Claims 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,738,978 to Hendricks ("Hendricks978") in view of WO 00/33160 by Charles Eldering ("Eldering"), as applied to base claim 12, and further in view of U.S. Patent No. 6,088,722 to Herz.

Claim 14

The combination Hendricks978-Eldering does not specifically disclose the feature recited in Claim 14.

However, in an analogous art, Herz discloses *wherein said demographic cluster knowledge base acquirer is based on a hidden Markov model* (48:67 and 29:1-4).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Herz in the combination Hendricks978-Eldering for the purpose of anticipating user requests so data can be downloaded in advance (Herz; 48:67 and 49:1-4).

Claim 19

The combination Hendricks978-Eldering does not specifically disclose the feature recited in Claim 19.

However, in an analogous art, Herz teaches *wherein the transition matrix is a two-dimensional matrix with transitions from television channels in normal form to television channels in temporal form* (see at least 48:67; 49:1-5 teaching a transition matrix and by definition a matrix has rows and columns thus at least two dimensions; the matrix is temporal because as information is updated the matrix would change).

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the Markov model as taught in Herz in the combination Hendricks978-Eldering for the purpose of anticipating user requests so data can be downloaded in advance (see at least 48:67 - 49:4).

12. Claim 20 is are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,738,978 to Hendricks (“Hendricks978”) in view of WO 00/33160 by Charles Eldering (“Eldering”), as applied to base claim 12, further in view of U.S. Patent No. 6,088,722 to Herz, as applied to Claim 14 and further in view of A tutorial on Hidden Markov Models and Selected Applications in Speech Recognition by Rabiner et al. (“Rabiner”).

Claim 20

The combination Hendricks978-Eldering further discloses:

wherein said demographic cluster knowledge base acquirer is configured to parameterize the user's behavior with a double pseudo hidden process (Hendricks978; see at least columns 18-23 wherein multiple sub matrixes are being analyzed from the database and this analysis is done at the network controller, so it is hidden from the subscriber), and to define a low-level statistical state machine with the active behavioral cluster (Hendricks978; see at least 36:18-23) and top-level statistical state machine with active behavioral clusters and an interaction between the active behavioral clusters (Hendricks978; 36:24-28 teaching combining the matrixes).

The combination Hendricks978-Eldering does not specifically disclose that the double pseudo process is *a Markov process*.

However, in an analogous art, Herz teaches a Markov process (see at least 48:67 – 49:7).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the Markov model in the combination Hendricks978-Eldering of the purpose of anticipating user requests so data can be downloaded in advance (48:67 – 49:4).

The combination Hendricks978-Eldering-Herz does not specifically disclose that the Markov process is *random*.

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However, in an analogous art, Rabiner teaches random processing (p. 257, second column paragraph starting with “[t]hese are ...” which teaches statistical modeling with random processing in relation to hidden Markov processes).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Rabiner teachings in the combination Hendricks978-Eldering-Herz for the purpose of using a random sample of the data to avoid excessive processing and calculations.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to Applicant’s disclosure.

14. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to PTO New Central Fax number:

(571) 273-8300, (for Technology Center 2400 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu “Antony” Nguyen-Ba whose telephone number is (571) 272-3701. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:30 pm.

If attempts to reach the examiner are unsuccessful, the examiner’s supervisor, John Miller can be reached at (571) 272-7353.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2400 Group receptionist (571) 272-2400.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/Hoang-Vu Antony Nguyen-Ba/

Primary Examiner, Art Unit 2421

May 21, 2009